Table J-82. Estimated transportation impacts for the State of Illinois.

Impact category	Mostly legal-weight truck	Mostly rail					
		Ending rail node in Nevada[a]					
		Caliente[b]	Dry Lake[c]	Jean[d]	Beowawe[e]	Eccles[f]	Apex[g]
ILLINOIS							
Shipments							
Truck (originating/total)	5,306/38,549	0/1,071	0/1,071	0/1,071	0/1,071	0/1,071	0/1,071
Rail (originating/total)	0/0	861/7,027	861/7,027	861/6,825	861/7,027	861/7,027	861/7,027
Radiological impacts							
Incident-free impacts							
Population (person-rem/LCFs)[h]	$2.8\times10^2/1.4\times10^{-1}$	$1.8\times10^2/8.9\times10^{-2}$	$1.8\times10^2/8.9\times10^{-2}$	$1.8\times10^2/7.4\times10^{-2}$	$1.8\times10^2/8.9\times10^{-2}$	$1.8\times10^2/8.9\times10^{-2}$	$1.8\times10^2/8.9\times10^{-2}$
Workers (person-rem/LCFs)	$7.6\times10^2/3.1\times10^{-1}$	$1.9\times10^2/7.5\times10^{-2}$	$1.9\times10^2/7.5\times10^{-2}$	$1.8\times10^2/7.4\times10^{-2}$	$1.9\times10^2/7.5\times10^{-2}$	$1.9\times10^2/7.5\times10^{-2}$	$1.9\times10^2/7.5\times10^{-2}$
Accident dose risk							
Population (person-rem/LCFs)	$1.6\times10^{-2}/8.1\times10^{-6}$	$1.6\times10^{-1}/7.9\times10^{-5}$	$1.6\times10^{-1}/7.9\times10^{-5}$	$1.5\times10^{-1}/7.7\times10^{-5}$	$1.6\times10^{-1}/7.9\times10^{-5}$	$1.6\times10^{-1}/7.9\times10^{-5}$	$1.6\times10^{-1}/7.9\times10^{-5}$
Nonradiological impacts							
Vehicle emissions (LCFs)	4.5×10^{-2}	8.0×10^{-2}	8.0×10^{-2}	7.9×10^{-2}	8.0×10^{-2}	8.0×10^{-2}	8.0×10^{-2}
Fatalities	0.17	0.19	0.19	0.18	0.19	0.19	0.19

a.   Under the mostly rail scenario, rail shipments would arrive in Nevada at one of six existing rail nodes. Impacts would vary according to the node. From that node, DOE would use one of the rail or heavy-haul implementing alternatives to complete the transportation to Yucca Mountain (see Section J.1.2).

b.   For heavy-haul truck transportation, the Caliente junction is the location of the proposed Caliente intermodal transfer station for heavy-haul trucks near the town of Caliente in eastern Nevada. Rail shipments terminating at this junction would continue to Yucca Mountain on heavy-haul trucks on one of the Caliente, Caliente/Chalk Mountain, or Caliente/Las Vegas routes. For branch rail line transportation, railcars would transfer via the Caliente Option to the Caliente Corridor at the Caliente junction.

c.   For heavy-haul truck transportation, the Dry Lake junction is near the location of the proposed Apex/Dry Lake intermodal transfer station for heavy-haul trucks in southeast Nevada. Rail shipments terminating at this junction would continue to Yucca Mountain on heavy-haul trucks on the Apex/Dry Lake route.

d.   For heavy-haul truck transportation, the Jean junction is near the location of the proposed Sloan/Jean intermodal transfer station for heavy-haul trucks in southern Nevada. Rail shipments terminating at this junction would continue to Yucca Mountain on heavy-haul trucks on the Sloan/Jean route. For branch rail line transportation, railcars would transfer from the mainline railroad via the Wilson Pass or Stateline Pass Option of the Jean Corridor, near the Jean junction.

e.   For branch rail line transportation, railcars would transfer from the mainline railroad at the Beowawe junction in north-central Nevada to the Carlin Corridor.

f.   For branch rail line transportation, railcars would transfer from the mainline railroad at the Eccles junction east of Caliente, Nevada, via the Eccles Option or nearby via the Crestline Option of the Caliente or Caliente-Chalk Mountain Corridor. Impacts in states outside Nevada would be the same for the Eccles and Crestline Options of the Caliente and Caliente-Chalk Mountain Corridors.

g.   For branch rail line transportation, railcars would transfer from the mainline railroad at the Apex junction in southeast Nevada, possibly via the Valley Connection, to the Valley Modified Corridor.
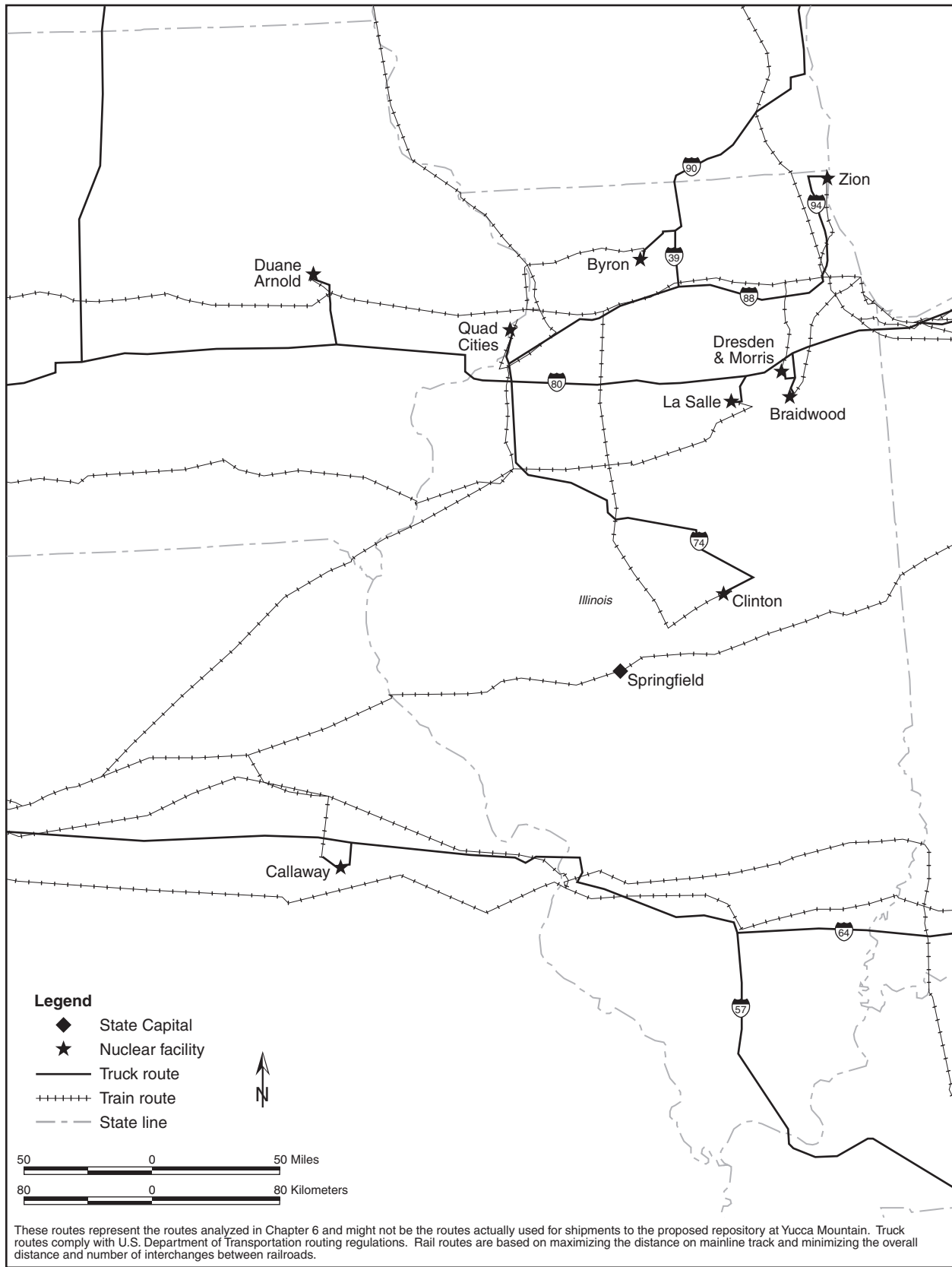
h.   LCF = latent cancer fatality.

Figure J-42. Highway and rail routes used to analyze transportation impacts - Illinois.

Table J-83. Estimated transportation impacts for the States of Kentucky and Tennessee.

Impact category	Mostly legal-weight truck	Mostly rail Ending rail node in Nevada[a]					
		Caliente[b]	Dry Lake[c]	Jean[d]	Beowawe[e]	Eccles[f]	Apex[g]
KENTUCKY							
Shipments							
Truck (originating/total)	0/18,435	0/491	0/491	0/491	0/491	0/491	0/491
Rail (originating/total)	0/0	0/3,312	0/3,312	0/3,110	0/3,312	0/3,312	0/3,312
Radiological impacts							
Incident-free impacts							
Population (person-rem/LCFs)[h]	$8.3 \times 10^1/4.2 \times 10^{-2}$	$2.0 \times 10^1/1.0 \times 10^{-2}$	$2.0 \times 10^1/1.0 \times 10^{-2}$	$1.9 \times 10^1/9.6 \times 10^{-3}$	$2.0 \times 10^1/1.0 \times 10^{-2}$	$2.0 \times 10^1/1.0 \times 10^{-2}$	$2.0 \times 10^1/1.0 \times 10^{-2}$
Workers (person-rem/LCFs)	$2.2 \times 10^2/8.7 \times 10^{-2}$	$4.9 \times 10^1/1.9 \times 10^{-2}$	$4.9 \times 10^1/1.9 \times 10^{-2}$	$4.7 \times 10^1/1.9 \times 10^{-2}$	$4.9 \times 10^1/1.9 \times 10^{-2}$	$4.9 \times 10^1/1.9 \times 10^{-2}$	$4.9 \times 10^1/1.9 \times 10^{-2}$
Accident dose risk							
Population (person-rem/LCFs)	$5.2 \times 10^{-3}/2.6 \times 10^{-6}$	$4.2 \times 10^{-3}/2.1 \times 10^{-6}$	$4.2 \times 10^{-3}/2.1 \times 10^{-6}$	$3.9 \times 10^{-3}/2.0 \times 10^{-6}$	$4.2 \times 10^{-3}/2.1 \times 10^{-6}$	$4.2 \times 10^{-3}/2.1 \times 10^{-6}$	$3.9 \times 10^{-3}/2.0 \times 10^{-6}$
Nonradiological impacts							
Vehicle emissions (LCFs)	1.1×10^{-2}	9.7×10^{-3}	9.7×10^{-3}	9.3×10^{-3}	9.7×10^{-3}	9.7×10^{-3}	9.7×10^{-3}
Fatalities	0.086	0.041	0.041	0.039	0.041	0.041	0.041
TENNESSEE							
Shipments							
Truck (originating/total)	802/15,026	0/491	0/491	0/491	0/491	0/491	0/491
Rail (originating/total)	0/0	121/3,312	121/3,312	121/3,110	121/3,312	121/3,312	121/3,312
Radiological impacts							
Incident-free impacts							
Population (person-rem/LCFs)[h]	$1.4 \times 10^2/6.9 \times 10^{-2}$	$5.5 \times 10^1/2.7 \times 10^{-2}$	$5.5 \times 10^1/2.7 \times 10^{-2}$	$5.1 \times 10^1/2.5 \times 10^{-2}$	$5.5 \times 10^1/2.7 \times 10^{-2}$	$5.5 \times 10^1/2.7 \times 10^{-2}$	$5.5 \times 10^1/2.7 \times 10^{-2}$
Workers (person-rem/LCFs)	$3.1 \times 10^2/1.2 \times 10^{-1}$	$8.2 \times 10^1/3.3 \times 10^{-2}$	$8.2 \times 10^1/3.3 \times 10^{-2}$	$7.7 \times 10^1/3.1 \times 10^{-2}$	$8.2 \times 10^1/3.3 \times 10^{-2}$	$8.2 \times 10^1/3.3 \times 10^{-2}$	$8.2 \times 10^1/3.3 \times 10^{-2}$
Accident dose risk							
Population (person-rem/LCFs)	$4.7 \times 10^{-3}/2.4 \times 10^{-6}$	$1.1 \times 10^{-2}/5.5 \times 10^{-6}$	$1.1 \times 10^{-2}/5.5 \times 10^{-6}$	$9.0 \times 10^{-3}/4.5 \times 10^{-6}$	$1.1 \times 10^{-2}/5.5 \times 10^{-6}$	$1.1 \times 10^{-2}/5.5 \times 10^{-6}$	$1.1 \times 10^{-2}/5.5 \times 10^{-6}$
Nonradiological impacts							
Vehicle emissions (LCFs)	2.8×10^{-2}	2.7×10^{-2}	2.7×10^{-2}	2.5×10^2	2.7×10^{-2}	2.7×10^{-2}	2.7×10^{-2}
Fatalities	0.09	0.07	0.07	0.07	0.07	0.07	0.07

a. Under the mostly rail scenario, rail shipments would arrive in Nevada at one of six existing rail nodes. Impacts would vary according to the node. From that node, DOE would use one of the rail or heavy-haul implementing alternatives to complete the transportation to Yucca Mountain (see Section J.1.2).

b. For heavy-haul truck transportation, the Caliente junction is the location of the proposed Caliente intermodal transfer station for heavy-haul trucks near the town of Caliente in eastern Nevada. Rail shipments terminating at this junction would continue to Yucca Mountain on heavy-haul trucks on one of the Caliente, Caliente/ Chalk Mountain, or Caliente/Las Vegas routes. For branch rail line transportation, railcars would transfer via the Caliente Option to the Caliente Corridor at the Caliente junction.

c. For heavy-haul truck transportation, the Dry Lake junction is near the location of the proposed Apex/Dry Lake intermodal transfer station for heavy-haul trucks in southeast Nevada. Rail shipments terminating at this junction would continue to Yucca Mountain on heavy-haul trucks on the Apex/Dry Lake route.

d. For heavy-haul truck transportation, the Jean junction is near the location of the proposed Sloan/Jean intermodal transfer station for heavy-haul trucks in southern Nevada. Rail shipments terminating at this junction would continue to Yucca Mountain on heavy-haul trucks on the Sloan/Jean route. For branch rail line transportation, railcars would transfer from the mainline railroad via the Wilson Pass or Stateline Pass Option of the Jean Corridor, near the Jean junction.

e. For branch rail line transportation, railcars would transfer from the mainline railroad at the Beowawe junction in north-central Nevada to the Carlin Corridor.

f. For branch rail line transportation, railcars would transfer from the mainline railroad at the Eccles junction east of Caliente, Nevada, via the Eccles Option or nearby via the Crestline Option of the Caliente or Caliente-Chalk Mountain Corridor. Impacts in states outside Nevada would be the same for the Eccles and Crestline Options of the Caliente and Caliente-Chalk Mountain Corridors.

g. For branch rail line transportation, railcars would transfer from the mainline railroad at the Apex junction in southeast Nevada, possibly via the Valley Connection, to the Valley Modified Corridor.
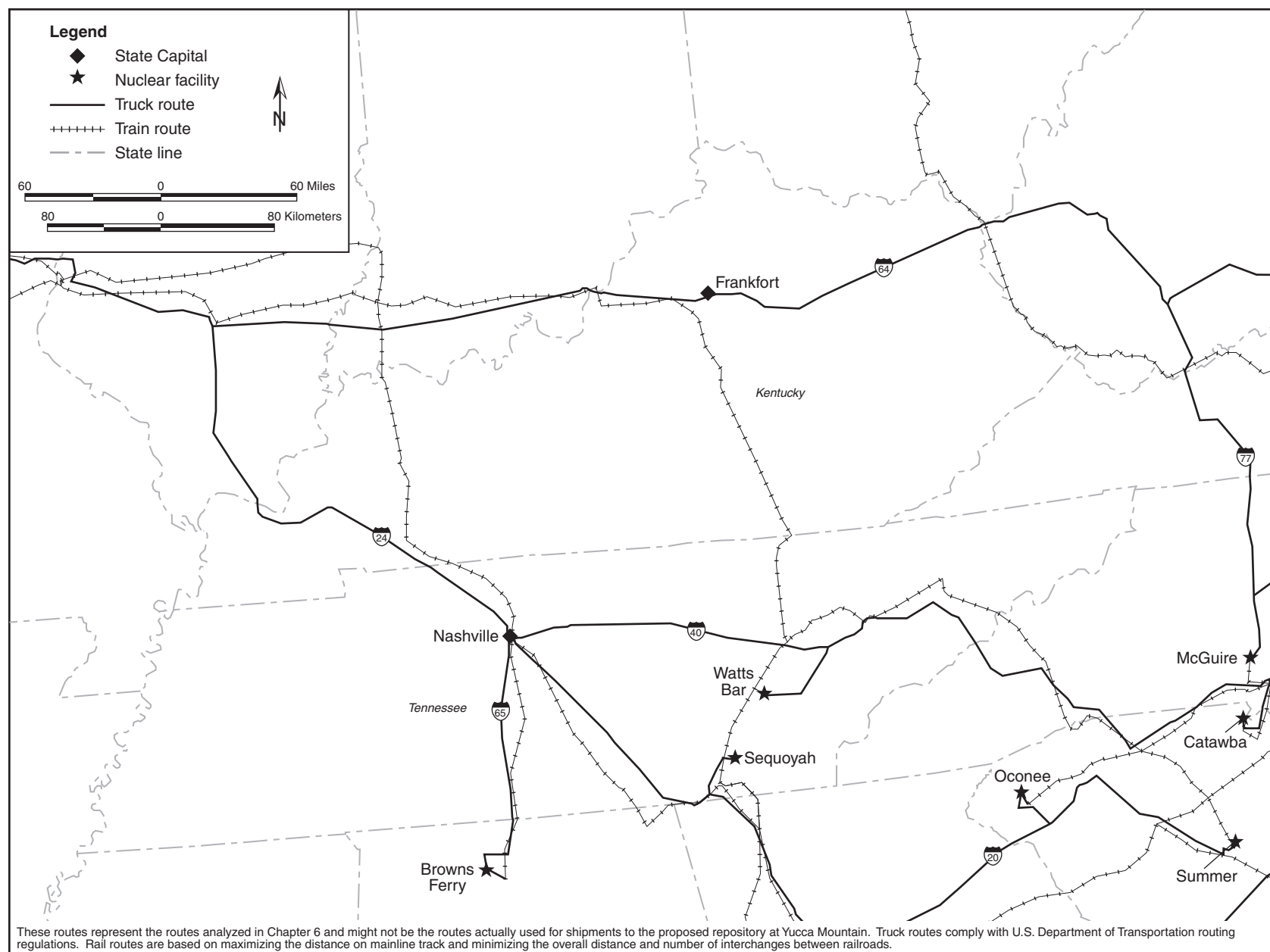
h. LCF = latent cancer fatality.

Figure J-43. Highway and rail routes used to analyze transportation impacts - Kentucky and Tennessee.

Table J-84. Estimated transportation impacts for the States of Louisiana and Mississippi.

Impact category	Mostly legal-weight truck	Mostly rail — Ending rail node in Nevada[a]					
		Caliente[b]	Dry Lake[c]	Jean[d]	Beowawe[e]	Eccles[d]	Apex[e]
LOUISIANA							
Shipments							
Truck (originating/total)	727/2,012	0/0	0/0	0/0	0/0	0/0	0/0
Rail (originating/total)	0/0	123/203	123/203	123/405	123/203	123/203	123/203
Radiological impacts							
Incident-free impacts							
Population (person-rem/LCFs)[h]	$2.6\times10^1/1.3\times10^{-2}$	$2.9\times10^0/1.5\times10^{-3}$	$2.6\times10^0/1.3\times10^{-3}$	$7.5\times10^0/3.8\times10^{-3}$	$3.0\times10^0/1.5\times10^{-3}$	$2.9\times10^0/1.5\times10^{-3}$	$2.6\times10^0/1.3\times10^{-3}$
Workers (person-rem/LCFs)	$7.7\times10^1/3.1\times10^{-2}$	$1.1\times10^1/4.3\times10^{-3}$	$1.0\times10^1/4.1\times10^{-3}$	$1.7\times10^1/6.7\times10^{-3}$	$1.1\times10^1/4.4\times10^{-3}$	$1.1\times10^1/4.3\times10^{-3}$	$1.0\times10^1/4.1\times10^{-3}$
Accident dose risk							
Population (person-rem/LCFs)	$1.3\times10^{-3}/6.6\times10^{-7}$	$2.9\times10^{-3}/1.5\times10^{-6}$	$2.5\times10^{-3}/1.3\times10^{-6}$	$9.3\times10^{-3}/4.6\times10^{-6}$	$3.0\times10^{-3}/1.5\times10^{-6}$	$2.9\times10^{-3}/1.5\times10^{-6}$	$2.5\times10^{-3}/1.3\times10^{-6}$
Nonradiological impacts							
Vehicle emissions (LCFs)	3.91×10^{-3}	1.06×10^{-3}	8.98×10^{-4}	3.31×10^{-3}	1.08×10^{-3}	1.06×10^{-3}	8.98×10^{-4}
Fatalities	0.018	0.018	0.016	0.037	0.018	0.018	0.016
MISSISSIPPI							
Shipments							
Truck (originating/total)	592/1,285	0/0	0/0	0/0	0/0	0/0	0/0
Rail (originating/total)	0/0	80/80	80/80	80/282	80/80	80/80	80/80
Radiological impacts							
Incident-free impacts							
Population (person-rem/LCFs)[h]	$2.8\times10^0/1.4\times10^{-3}$	$6.2\times10^{-1}/3.1\times10^{-4}$	$6.2\times10^{-1}/3.1\times10^{-4}$	$2.7\times10^0/1.3\times10^{-3}$	$6.2\times10^{-1}/3.1\times10^{-4}$	$6.2\times10^{-1}/3.1\times10^{-4}$	$6.2\times10^{-1}/3.1\times10^{-4}$
Workers (person-rem/LCFs)	$1.8\times10^1/7.3\times10^{-3}$	$4.3\times10^0/1.7\times10^{-3}$	$4.3\times10^0/1.7\times10^{-3}$	$6.1\times10^1/2.4\times10^{-3}$	$4.3\times10^0/1.7\times10^{-3}$	$4.3\times10^0/1.7\times10^{-3}$	$4.3\times10^0/1.7\times10^{-3}$
Accident dose risk							
Population (person-rem/LCFs)	$2.3\times10^{-5}/1.1\times10^{-8}$	$1.1\times10^{-5}/5.7\times10^{-9}$	$1.1\times10^{-5}/5.7\times10^{-9}$	$3.3\times10^{-3}/1.7\times10^{-6}$	$1.1\times10^{-5}/5.7\times10^{-9}$	$1.1\times10^{-5}/5.7\times10^{-9}$	$1.1\times10^{-5}/5.7\times10^{-9}$
Nonradiological impacts							
Vehicle emissions (LCFs)	2.7×10^{-4}	8.5×10^{-6}	8.5×10^{-6}	1.1×10^{-3}	8.5×10^{-6}	8.5×10^{-6}	8.5×10^{-6}
Fatalities	5.9×10^{-4}	3.7×10^{-4}	3.7×10^{-4}	4.3×10^{-3}	3.7×10^{-4}	3.7×10^{-4}	3.7×10^{-4}

a. Under the mostly rail scenario, rail shipments would arrive in Nevada at one of six existing rail nodes. Impacts would vary according to the node. From that node, DOE would use one of the rail or heavy-haul implementing alternatives to complete the transportation to Yucca Mountain (see Section J.1.2).

b. For heavy-haul truck transportation, the Caliente junction is the location of the proposed Caliente intermodal transfer station for heavy-haul trucks near the town of Caliente in eastern Nevada. Rail shipments terminating at this junction would continue to Yucca Mountain on heavy-haul trucks on one of the Caliente, Caliente/Chalk Mountain, or Caliente/Las Vegas routes. For branch rail line transportation, railcars would transfer via the Caliente Option to the Caliente Corridor at the Caliente junction.

c. For heavy-haul truck transportation, the Dry Lake junction is near the location of the proposed Apex/Dry Lake intermodal transfer station for heavy-haul trucks in southeast Nevada. Rail shipments terminating at this junction would continue to Yucca Mountain on heavy-haul trucks on the Apex/Dry Lake route.

d. For heavy-haul truck transportation, the Jean junction is near the location of the proposed Sloan/Jean intermodal transfer station for heavy-haul trucks in southern Nevada. Rail shipments terminating at this junction would continue to Yucca Mountain on heavy-haul trucks on the Sloan/Jean route. For branch rail line transportation, railcars would transfer from the mainline railroad via the Wilson Pass or Stateline Pass Option of the Jean Corridor, near the Jean junction.

e. For branch rail line transportation, railcars would transfer from the mainline railroad at the Beowawe junction in north-central Nevada to the Carlin Corridor.

f. For branch rail line transportation, railcars would transfer from the mainline railroad at the Eccles junction east of Caliente, Nevada, via the Eccles Option or nearby via the Crestline Option of the Caliente or Caliente-Chalk Mountain Corridor. Impacts in states outside Nevada would be the same for the Eccles and Crestline Options of the Caliente and Caliente-Chalk Mountain Corridors.

g. For branch rail line transportation, railcars would transfer from the mainline railroad at the Apex junction in southeast Nevada, possibly via the Valley Connection, to the Valley Modified Corridor.
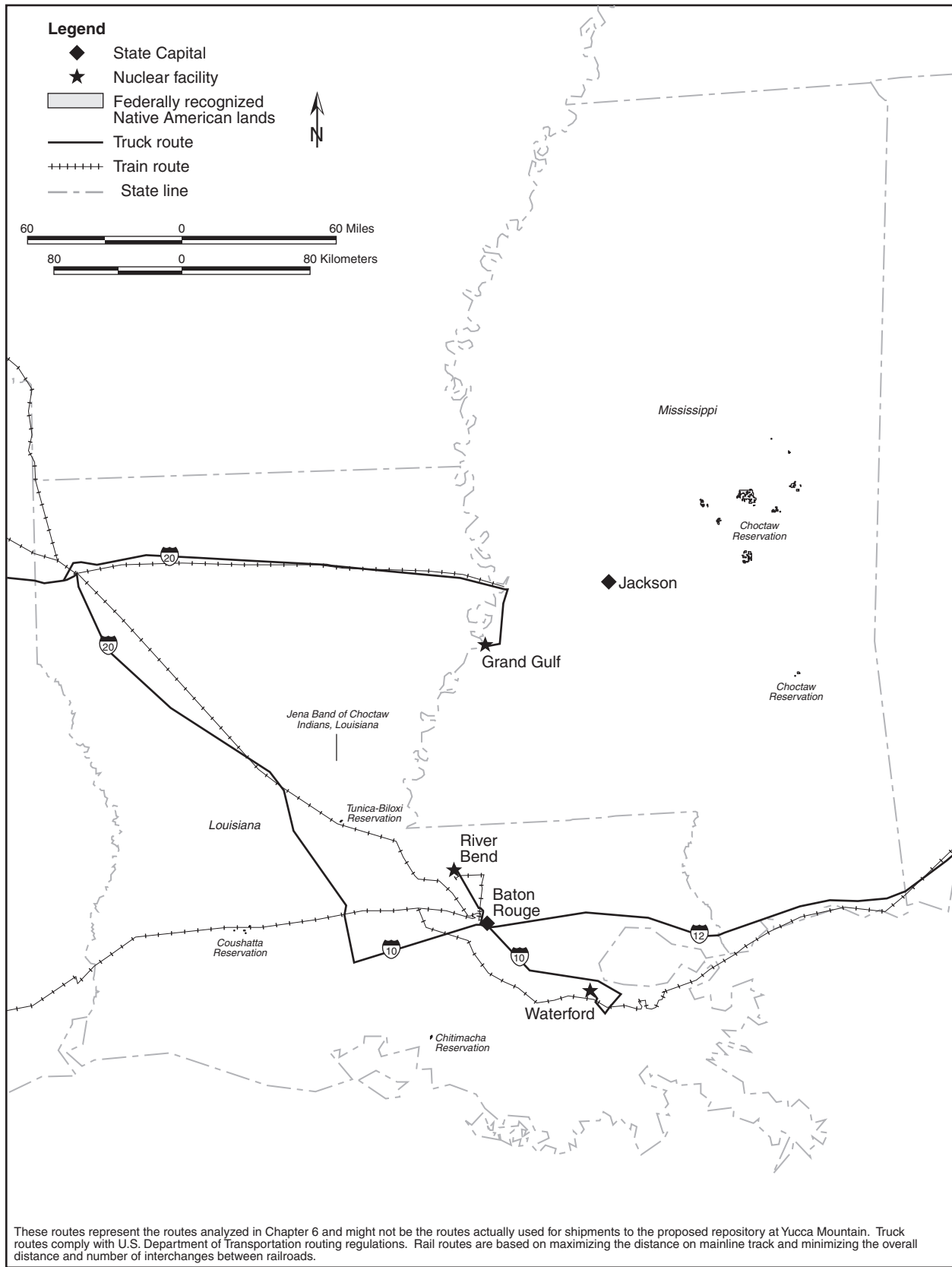
h. LCF = latent cancer fatality.

Figure J-44. Highway and rail routes used to analyze transportation impacts - Louisiana and Mississippi.

Table J-85. Estimated transportation impacts for the States of Maine, Massachusetts, New Hampshire, and Vermont (page 1 of 2).

		Mostly rail					
				Ending rail node in Nevada[a]			
Impact category	Mostly legal-weight truck	Caliente[b]	Dry Lake[c]	Jean[d]	Beowawe[e]	Eccles[f]	Apex[g]
MAINE							
Shipments							
Truck (originating/total)	356/356	0/0	0/0	0/0	0/0	0/0	0/0
Rail (originating/total)	0/0	55/55	55/55	55/55	55/55	55/55	55/55
Radiological impacts							
Incident-free impacts							
Population (person-rem/LCFs)[h]	1.9×10^0/9.5×10^{-4}	5.2×10^{-1}/2.6×10^{-4}	5.2×10^{-1}/2.6×10^{-4}	5.2×10^{-1}/2.6×10^{-4}	5.2×10^{-1}/2.6×10^{-4}	5.2×10^{-1}/2.6×10^{-4}	5.2×10^{-1}/2.6×10^{-4}
Workers (person-rem/LCFs)	9.9×10^0/4.0×10^{-3}	3.2×10^0/1.3×10^{-3}	3.2×10^0/1.3×10^{-3}	3.2×10^0/1.3×10^{-3}	3.2×10^0/1.3×10^{-3}	3.2×10^0/1.3×10^{-3}	3.2×10^0/1.3×10^{-3}
Accident dose risk							
Population (person-rem/LCFs)	2.2×10^{-4}/1.1×10^{-7}	1.1×10^{-3}/5.6×10^{-7}	1.1×10^{-3}/5.6×10^{-7}	1.1×10^{-3}/5.6×10^{-7}	1.1×10^{-3}/5.6×10^{-7}	1.1×10^{-3}/5.6×10^{-7}	1.1×10^{-3}/5.6×10^{-7}
Nonradiological impacts							
Vehicle emissions (LCFs)	2.9×10^{-4}	1.7×10^{-4}	1.7×10^{-4}	1.7×10^{-4}	1.7×10^{-4}	1.7×10^{-4}	1.7×10^{-4}
Fatalities	9.7×10^{-4}	2.9×10^{-3}	2.9×10^{-3}	2.9×10^{-3}	2.9×10^{-3}	2.9×10^{-3}	2.9×10^{-3}
MASSACHUSETTS							
Shipments							
Truck (originating/total)	456/1,469	154/154	154/154	154/154	154/154	154/154	154/154
Rail (originating/total)	0/0	39/511	39/511	39/511	39/511	39/511	39/511
Radiological impacts							
Incident-free impacts							
Population (person-rem/LCFs)[h]	1.5×10^1/7.3×10^{-3}	7.9×10^0/4.0×10^{-3}	7.9×10^0/4.0×10^{-3}	7.9×10^0/4.0×10^{-3}	7.9×10^0/4.0×10^{-3}	7.9×10^0/4.0×10^{-3}	7.9×10^0/4.0×10^{-3}
Workers (person-rem/LCFs)	3.0×10^1/1.2×10^{-2}	1.3×10^1/1.5×10^{-3}	1.3×10^1/1.5×10^{-3}	1.3×10^1/1.5×10^{-3}	1.3×10^1/1.5×10^{-3}	1.3×10^1/1.5×10^{-3}	1.3×10^1/1.5×10^{-3}
Accident dose risk							
Population (person-rem/LCFs)	4.8×10^{-4}/2.4×10^{-7}	1.5×10^{-2}/7.3×10^{-6}	1.5×10^{-2}/7.3×10^{-6}	1.5×10^{-2}/7.3×10^{-6}	1.5×10^{-2}/7.3×10^{-6}	1.5×10^{-2}/7.3×10^{-6}	1.5×10^{-2}/7.3×10^{-6}
Nonradiological impacts							
Vehicle emissions (LCFs)	3.7×10^{-3}	3.3×10^{-3}	3.3×10^{-3}	3.3×10^{-3}	3.3×10^{-3}	3.3×10^{-3}	3.3×10^{-3}
Fatalities	0.001	0.068	0.068	0.068	0.068	0.068	0.068
NEW HAMPSHIRE							
Shipments							
Truck (originating/total)	277/633	0/0	0/0	0/0	0/0	0/0	0/0
Rail (originating/total)	0/0	49/104	49/104	49/104	49/104	49/104	49/104
Radiological impacts							
Incident-free impacts							
Population (person-rem/LCFs)[b]	4.9×10^{-1}/2.5×10^{-4}	4.4×10^{-1}/2.2×10^{-4}	4.4×10^{-1}/2.2×10^{-4}	4.4×10^{-1}/2.2×10^{-4}	4.4×10^{-1}/2.2×10^{-4}	4.4×10^{-1}/2.2×10^{-4}	4.4×10^{-1}/2.2×10^{-4}
Workers (person-rem/LCFs)	5.7×10^0/2.3×10^{-3}	2.7×10^0/1.1×10^{-3}	2.7×10^0/1.1×10^{-3}	2.7×10^0/1.1×10^{-3}	2.7×10^0/1.1×10^{-3}	2.7×10^0/1.1×10^{-3}	2.7×10^0/1.1×10^{-3}
Accident dose risk							
Population (person-rem/LCFs)	4.2×10^{-5}/2.1×10^{-8}	8.5×10^{-4}/4.3×10^{-7}	8.5×10^{-4}/4.3×10^{-7}	8.5×10^{-4}/4.3×10^{-7}	8.5×10^{-4}/4.3×10^{-7}	8.5×10^{-4}/4.3×10^{-7}	8.5×10^{-4}/4.3×10^{-7}
Nonradiological impacts							
Vehicle emissions (LCFs)	8.9×10^{-5}	1.4×10^{-4}	1.4×10^{-4}	1.4×10^{-4}	1.4×10^{-4}	1.4×10^{-4}	1.4×10^{-4}
Fatalities	1.2×10^{-4}	1.0×10^{-3}	1.0×10^{-3}	1.0×10^{-3}	1.0×10^{-3}	1.0×10^{-3}	1.0×10^{-3}

Table J-85. Estimated transportation impacts for the States of Maine, Massachusetts, New Hampshire, and Vermont (page 2 of 2).

Impact category	Mostly legal-weight truck	Mostly rail — Ending rail node in Nevada[a]					
		Caliente[b]	Dry Lake[c]	Jean[d]	Beowawe[e]	Eccles[f]	Apex[g]
VERMONT							
Shipments							
Truck (originating/total)	380/380	0/0	0/0	0/0	0/0	0/0	0/0
Rail (originating/total)	0/0	73/192	73/192	73/192	73/192	73/192	73/192
Radiological impacts							
Incident-free impacts							
Population (person-rem/LCFs)[h]	$4.1\times10^{-1}/2.1\times10^{-4}$	$1.6\times10^{-1}/7.8\times10^{-5}$	$1.6\times10^{-1}/7.8\times10^{-5}$	$1.6\times10^{-1}/7.8\times10^{-5}$	$1.6\times10^{-1}/7.8\times10^{-5}$	$1.6\times10^{-1}/7.8\times10^{-5}$	$1.6\times10^{-1}/7.8\times10^{-5}$
Workers (person-rem/LCFs)	$7.5\times10^{0}/3.0\times10^{-3}$	$3.6\times10^{0}/1.4\times10^{-3}$	$3.6\times10^{0}/1.4\times10^{-3}$	$3.6\times10^{0}/1.4\times10^{-3}$	$3.6\times10^{0}/1.4\times10^{-3}$	$3.6\times10^{0}/1.4\times10^{-3}$	$3.6\times10^{0}/1.4\times10^{-3}$
Accident dose risk							
Population (person-rem/LCFs)	$2.4\times10^{-5}/1.2\times10^{-8}$	$7.0\times10^{-5}/3.5\times10^{-8}$	$7.0\times10^{-5}/3.5\times10^{-8}$	$7.0\times10^{-5}/3.5\times10^{-8}$	$7.0\times10^{-5}/3.5\times10^{-8}$	$7.0\times10^{-5}/3.5\times10^{-8}$	$7.0\times10^{-5}/3.5\times10^{-8}$
Nonradiological impacts							
Vehicle emissions (LCFs)	8.9×10^{-5}	1.6×10^{-5}	1.6×10^{-5}	1.6×10^{-5}	1.6×10^{-5}	1.6×10^{-5}	1.6×10^{-5}
Fatalities	1.1×10^{-4}	1.5×10^{-4}	1.5×10^{-4}	1.5×10^{-4}	1.5×10^{-4}	1.5×10^{-4}	1.5×10^{-4}

a. Under the mostly rail scenario, rail shipments would arrive in Nevada at one of six existing rail nodes. Impacts would vary according to the node. From that node, DOE would use one of the rail or heavy-haul implementing alternatives to complete the transportation to Yucca Mountain (see Section J.1.2).

b. For heavy-haul truck transportation, the Caliente junction is the location of the proposed Caliente intermodal transfer station for heavy-haul trucks near the town of Caliente in eastern Nevada. Rail shipments terminating at this junction would continue to Yucca Mountain on heavy-haul trucks on one of the Caliente, Caliente/Chalk Mountain, or Caliente/Las Vegas routes. For branch rail line transportation, railcars would transfer via the Caliente Option to the Caliente Corridor at the Caliente junction.

c. For heavy-haul truck transportation, the Dry Lake junction is near the location of the proposed Apex/Dry Lake intermodal transfer station for heavy-haul trucks in southeast Nevada. Rail shipments terminating at this junction would continue to Yucca Mountain on heavy-haul trucks on the Apex/Dry Lake route.

d. For heavy-haul truck transportation, the Jean junction is near the location of the proposed Sloan/Jean intermodal transfer station for heavy-haul trucks in southern Nevada. Rail shipments terminating at this junction would continue to Yucca Mountain on heavy-haul trucks on the Sloan/Jean route. For branch rail line transportation, railcars would transfer from the mainline railroad via the Wilson Pass or Stateline Pass Option of the Jean Corridor, near the Jean junction.

e. For branch rail line transportation, railcars would transfer from the mainline railroad at the Beowawe junction in north-central Nevada to the Carlin Corridor.

f. For branch rail line transportation, railcars would transfer from the mainline railroad at the Eccles junction east of Caliente, Nevada, via the Eccles Option or nearby via the Crestline Option of the Caliente or Caliente-Chalk Mountain Corridor. Impacts in states outside Nevada would be the same for the Eccles and Crestline Options of the Caliente and Caliente-Chalk Mountain Corridors.

g. For branch rail line transportation, railcars would transfer from the mainline railroad at the Apex junction in southeast Nevada, possibly via the Valley Connection, to the Valley Modified Corridor.
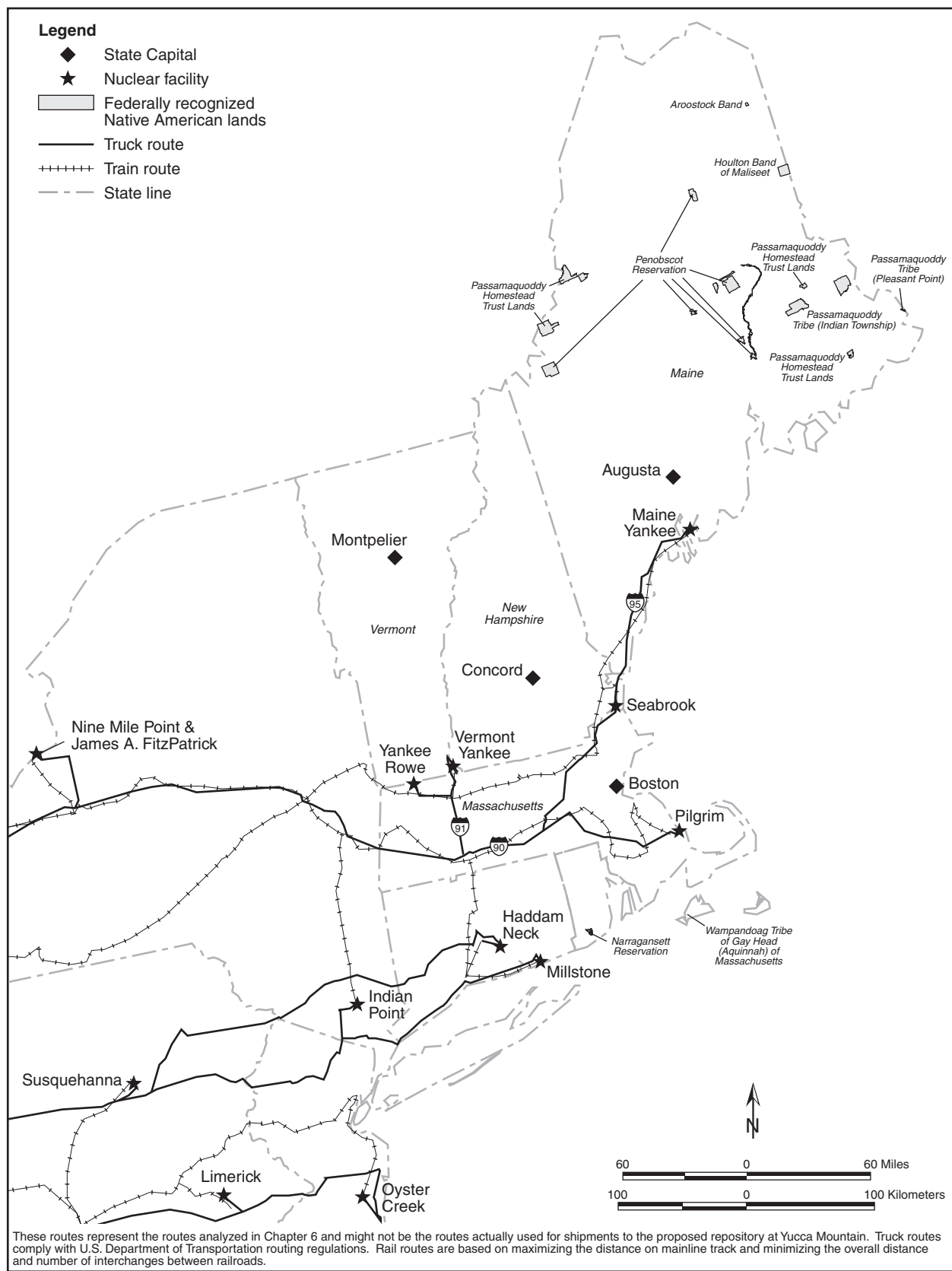
h. LCF = latent cancer fatality.

Figure J-45. Highway and rail routes used to analyze transportation impacts - Maine, Massachusetts, New Hampshire, and Vermont.

Table J-86. Estimated transportation impacts for the States of Minnesota and Wisconsin (page 1 of 2).

Impact category	Mostly legal-weight truck	Mostly rail					
		Ending rail node in Nevada					
		Caliente[b]	Dry Lake[c]	Jean[d]	Beowawe[e]	Eccles[f]	Apex[g]
MINNESOTA							
Shipments							
Truck (originating/total)	922/959	8/8	8/8	8/8	8/8	8/8	8/8
Rail (originating/total)	0/0	135/135	135/135	135/135	135/135	135/135	135/135
Radiological impacts							
Incident-free impacts							
Population (person-rem/LCFs)[h]	$7.0\times10^0/3.5\times10^{-3}$	$3.1\times10^0/1.5\times10^{-3}$	$3.1\times10^0/1.5\times10^{-3}$	$3.1\times10^0/1.5\times10^{-3}$	$3.1\times10^0/1.5\times10^{-3}$	$3.1\times10^0/1.5\times10^{-3}$	$3.1\times10^0/1.5\times10^{-3}$
Workers (person-rem/LCFs)	$3.1\times10^1/1.2\times10^{-2}$	$9.9\times10^0/4.0\times10^{-3}$	$9.9\times10^0/4.0\times10^{-3}$	$9.9\times10^0/4.0\times10^{-3}$	$9.9\times10^0/4.0\times10^{-3}$	$9.9\times10^0/4.0\times10^{-3}$	$9.9\times10^0/4.0\times10^{-3}$
Accident dose risk							
Population (person-rem/LCFs)	$4.1\times10^{-4}/2.1\times10^{-7}$	$2.2\times10^{-3}/1.1\times10^{-6}$	$2.2\times10^{-3}/1.1\times10^{-6}$	$2.2\times10^{-3}/1.1\times10^{-6}$	$2.2\times10^{-3}/1.1\times10^{-6}$	$2.2\times10^{-3}/1.1\times10^{-6}$	$2.2\times10^{-3}/1.1\times10^{-6}$
Nonradiological impacts							
Vehicle emissions (LCFs)	1.5×10^{-3}	1.1×10^{-3}	1.1×10^{-3}	1.1×10^{-3}	1.1×10^{-3}	1.1×10^{-3}	1.1×10^{-3}
Fatalities	1.4×10^{-3}	3.3×10^{-3}	3.3×10^{-3}	3.3×10^{-3}	3.3×10^{-3}	3.3×10^{-3}	3.3×10^{-3}
WISCONSIN							
Shipments							
Truck (originating/total)	996/996	0/0	0/0	0/0	0/0	0/0	0/0
Rail (originating/total)	0/0	186/186	186/186	186/186	186/186	186/186	186/186
Radiological impacts							
Incident-free impacts							
Population (person-rem/LCFs)[h]	$1.1\times10^1/5.7\times10^{-3}$	$4.5\times10^0/2.2\times10^{-3}$	$4.5\times10^0/2.2\times10^{-3}$	$4.5\times10^0/2.2\times10^{-3}$	$4.5\times10^0/2.2\times10^{-3}$	$4.5\times10^0/2.2\times10^{-3}$	$4.5\times10^0/2.2\times10^{-3}$
Workers (person-rem/LCFs)	$3.7\times10^1/1.5\times10^{-2}$	$1.3\times10^1/5.3\times10^{-3}$	$1.3\times10^1/5.3\times10^{-3}$	$1.3\times10^1/5.3\times10^{-3}$	$1.3\times10^1/5.3\times10^{-3}$	$1.3\times10^1/5.3\times10^{-3}$	$1.3\times10^1/5.3\times10^{-3}$
Accident dose risk							
Population (person-rem/LCFs)	$2.3\times10^{-3}/1.1\times10^{-6}$	$4.2\times10^{-3}/2.1\times10^{-6}$	$4.2\times10^{-3}/2.1\times10^{-6}$	$4.2\times10^{-3}/2.1\times10^{-6}$	$4.2\times10^{-3}/2.1\times10^{-6}$	$4.2\times10^{-3}/2.1\times10^{-6}$	$4.2\times10^{-3}/2.1\times10^{-6}$
Nonradiological impacts							
Vehicle emissions (LCFs)	3.4×10^{-3}	1.5×10^{-3}	1.5×10^{-3}	1.5×10^{-3}	1.5×10^{-3}	1.5×10^{-3}	1.5×10^{-3}
Fatalities	0.005	0.006	0.006	0.006	0.006	0.006	0.006

a. Under the mostly rail scenario, rail shipments would arrive in Nevada at one of six existing rail nodes. Impacts would vary according to the node. From that node, DOE would use one of the rail or heavy-haul implementing alternatives to complete the transportation to Yucca Mountain (see Section J.1.2).

b. For heavy-haul truck transportation, the Caliente junction is the location of the proposed Caliente intermodal transfer station for heavy-haul trucks near the town of Caliente in eastern Nevada. Rail shipments terminating at this junction would continue to Yucca Mountain on heavy-haul trucks on one of the Caliente, Caliente/ Chalk Mountain, or Caliente/Las Vegas routes. For branch rail line transportation, railcars would transfer via the Caliente Option to the Caliente Corridor at the Caliente junction.

c. For heavy-haul truck transportation, the Dry Lake junction is near the location of the proposed Apex/Dry Lake intermodal transfer station for heavy-haul trucks in southeast Nevada. Rail shipments terminating at this junction would continue to Yucca Mountain on heavy-haul trucks on the Apex/Dry Lake route.

d. For heavy-haul truck transportation, the Jean junction is near the location of the proposed Sloan/Jean intermodal transfer station for heavy-haul trucks in southern Nevada. Rail shipments terminating at this junction would continue to Yucca Mountain on heavy-haul trucks on the Sloan/Jean route. For branch rail line transportation, railcars would transfer from the mainline railroad via the Wilson Pass or Stateline Pass Option of the Jean Corridor, near the Jean junction.

e. For branch rail line transportation, railcars would transfer from the mainline railroad at the Beowawe junction in north-central Nevada to the Carlin Corridor.

f. For branch rail line transportation, railcars would transfer from the mainline railroad at the Eccles junction east of Caliente, Nevada, via the Eccles Option or nearby via the Crestline Option of the Caliente or Caliente-Chalk Mountain Corridor. Impacts in states outside Nevada would be the same for the Eccles and Crestline Options of the Caliente and Caliente-Chalk Mountain Corridors.

g. For branch rail line transportation, railcars would transfer from the mainline railroad at the Apex junction in southeast Nevada, possibly via the Valley Connection, to the Valley Modified Corridor.
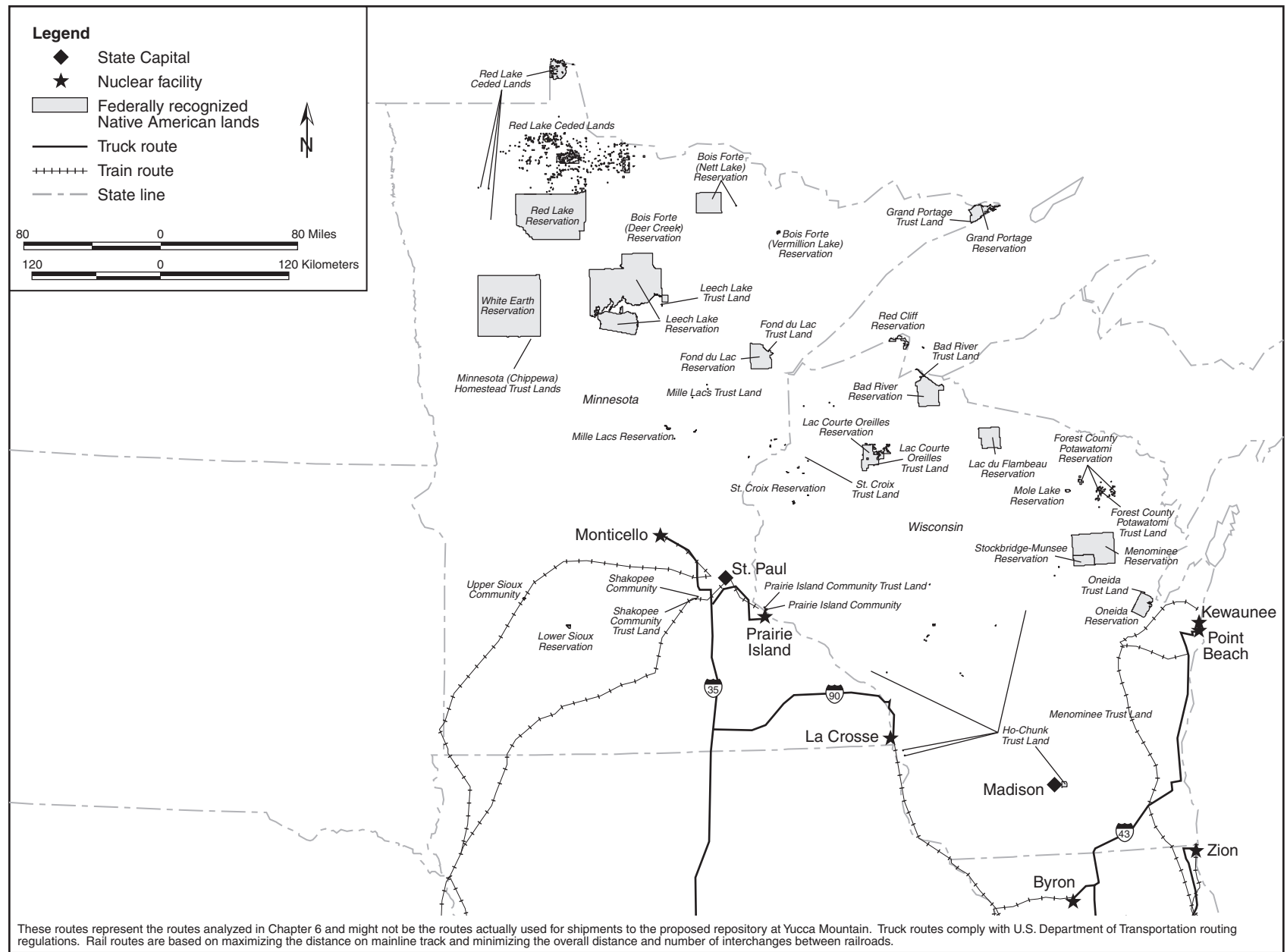
h. LCF = latent cancer fatality.

These routes represent the routes analyzed in Chapter 6 and might not be the routes actually used for shipments to the proposed repository at Yucca Mountain. Truck routes comply with U.S. Department of Transportation routing regulations. Rail routes are based on maximizing the distance on mainline track and minimizing the overall distance and number of interchanges between railroads.

Figure J-46. Highway and rail routes used to analyze transportation impacts - Minnesota and Wisconsin.

Table J-87. Estimated transportation impacts for the State of Missouri.

		Mostly rail					
		Ending rail node in Nevada[a]					
Impact category	Mostly legal-weight truck	Caliente[b]	Dry Lake[c]	Jean[d]	Beowawe[e]	Eccles[f]	Apex[g]
MISSOURI							
Shipments							
Truck (originating/total)	435/19,142	0/491	0/491	0/491	0/491	0/491	0/491
Rail (originating/total)	0/0	71/4,069	71/4,069	71/4,065	71/4,126	71/4,069	71/4,069
Radiological impacts							
Incident-free impacts							
Population (person-rem/LCFs)[h]	$3.5\times10^2/1.7\times10^{-1}$	$8.2\times10^1/4.1\times10^{-2}$	$8.2\times10^1/4.1\times10^{-2}$	$7.8\times10^1/3.9\times10^{-2}$	$8.3\times10^1/4.2\times10^{-2}$	$8.2\times10^1/4.1\times10^{-2}$	$8.2\times10^1/4.1\times10^{-2}$
Workers (person-rem/LCFs)	$7.5\times10^2/3.0\times10^{-1}$	$1.4\times10^2/5.5\times10^{-2}$	$1.4\times10^2/5.5\times10^{-2}$	$1.4\times10^2/5.5\times10^{-2}$	$1.4\times10^2/5.6\times10^{-2}$	$1.4\times10^2/5.5\times10^{-2}$	$1.4\times10^2/5.5\times10^{-2}$
Accident dose risk							
Population (person-rem/LCFs)	$4.8\times10^{-2}/2.4\times10^{-5}$	$1.8\times10^{-2}/8.8\times10^{-6}$	$1.8\times10^{-2}/8.8\times10^{-6}$	$1.6\times10^{-2}/7.9\times10^{-6}$	$1.8\times10^{-2}/8.9\times10^{-6}$	$1.8\times10^{-2}/8.8\times10^{-6}$	$1.8\times10^{-2}/8.8\times10^{-6}$
Nonradiological impacts							
Vehicle emissions (LCFs)	7.5×10^{-2}	3.8×10^{-2}	3.8×10^{-2}	3.6×10^{-2}	3.8×10^{-2}	3.8×10^{-2}	3.8×10^{-2}
Fatalities	0.28	0.086	0.086	0.085	0.086	0.086	0.086

a. Under the mostly rail scenario, rail shipments would arrive in Nevada at one of six existing rail nodes. Impacts would vary according to the node. From that node, DOE would use one of the rail or heavy-haul implementing alternatives to complete the transportation to Yucca Mountain (see Section J.1.2).

b. For heavy-haul truck transportation, the Caliente junction is the location of the proposed Caliente intermodal transfer station for heavy-haul trucks near the town of Caliente in eastern Nevada. Rail shipments terminating at this junction would continue to Yucca Mountain on heavy-haul trucks on one of the Caliente, Caliente/Chalk Mountain, or Caliente/Las Vegas routes. For branch rail line transportation, railcars would transfer via the Caliente Option to the Caliente Corridor at the Caliente junction.

c. For heavy-haul truck transportation, the Dry Lake junction is near the location of the proposed Apex/Dry Lake intermodal transfer station for heavy-haul trucks in southeast Nevada. Rail shipments terminating at this junction would continue to Yucca Mountain on heavy-haul trucks on the Apex/Dry Lake route.

d. For heavy-haul truck transportation, the Jean junction is near the location of the proposed Sloan/Jean intermodal transfer station for heavy-haul trucks in southern Nevada. Rail shipments terminating at this junction would continue to Yucca Mountain on heavy-haul trucks on the Sloan/Jean route. For branch rail line transportation, railcars would transfer from the mainline railroad via the Wilson Pass or Stateline Pass Option of the Jean Corridor, near the Jean junction.

e. For branch rail line transportation, railcars would transfer from the mainline railroad at the Beowawe junction in north-central Nevada to the Carlin Corridor.

f. For branch rail line transportation, railcars would transfer from the mainline railroad at the Eccles junction east of Caliente, Nevada, via the Eccles Option or nearby via the Crestline Option of the Caliente or Caliente-Chalk Mountain Corridor. Impacts in states outside Nevada would be the same for the Eccles and Crestline Options of the Caliente and Caliente-Chalk Mountain Corridors.

g. For branch rail line transportation, railcars would transfer from the mainline railroad at the Apex junction in southeast Nevada, possibly via the Valley Connection, to the Valley Modified Corridor.

h. LCF = latent cancer fatality.